IN THE CLAIMS:

1. *(currently amended)* A method for characterizing ingress events in a network environment having return path communications being accomplished in a plurality of frequency bands, the method comprising the steps of:

(a) detecting one or more ingress events in the return path over a pre-determined time period;

(b) marking the frequency band wherein each ingress event exceeds a pre-determined threshold;

(c) marking each time interval within the pre-determined time period in which the ingress events exceeds a pre-determined threshold; ~~and~~

(d) creating a time/frequency map of the ingress events, wherein the time/frequency map contains the results of steps (b) and (c);

(e) summing the results of the marking process of step (c) across a plurality of frequency bands within a specific time interval.

2. *(original)* The method of claim 1 wherein the time/frequency map is characterized by marking each ingress event that exceeds the pre-determined threshold with a "1".

3. *(currently amended)* The method of claim 1, further comprising the steps of:

(~~e~~f) evaluating the time/frequency map, and

(~~f~~g) mitigating the return path ingress, based on the evaluation of the time/frequency map.

4. *(currently amended)* The method of claim 3 wherein step (~~f~~g) is accomplished by attenuating the return path signal.

5. *(original)* The method of claim 4 wherein the attenuation is performed based on a power-level equalization algorithm.

6. *(currently amended)* The method described in claim 3 wherein step (~~f~~g) is accomplished by removing the return signal path.

7. ***cancelled.***

8. *(currently amended)* The method of claim ~~7~~ 1, further comprising the steps of:

(~~f~~h) labeling the ingress event as a wideband ingress event if the sum obtained in step (e~~f~~) exceeds a pre-determined wideband ingress threshold.

9. *(currently amended)* The method of claim ~~7~~1, further comprising the steps of:

(~~f~~i) labeling the ingress event as a narrowband ingress event if the sum obtained in step (e~~f~~) is below a pre-determined narrowband ingress threshold.

10. *(currently amended)* The method of claim 1, further comprising the steps of:

(e~~j~~) summing the results of the marking process of step (c) across a plurality of time intervals within a specific frequency band.

11. *(currently amended)* The method of claim 10, further comprising the step of:

(~~f~~k) labeling the ingress event as a narrowband ingress event when the sum obtained in step (e~~f~~) exceeds a pre-determined narrowband ingress threshold.

12. *(currently amended)* The method of claim 10, further comprising the step of:

(~~f~~l) labeling the ingress event as wideband ingress when the sum obtained in step (e~~f~~) is below a pre-determined wideband ingress threshold.

13. *(original)* The method of claim 1 wherein the step (a) occurs at the head-end.

14. *(original)* The method of claim 1 wherein the step (a) occurs substantially near the subscriber location.

15. *(original)* The method of claim 1 wherein the step (a) occurs at a test point in the network.

16. *(original)* The method of claim 1 wherein the step (a) occurs at a head-end of the network.

17. *(original)* The method of claim 1 wherein the step (a) utilizes ingress measurements extending across the return frequency band.

18. *(original)* The method of claim 1 wherein the step (a) takes place in a sub-band of the return frequency band.

19. *(original)* The method of claim 1 wherein the step (a) takes place in an active sub-band of the return frequency band.

20. *(original)* The method of claim 1 wherein the step (a) takes place in an inactive sub-band of the return frequency band.

21. *(original)* The method of claim 1 wherein the step (a) comprises the steps of:

(1) measuring an average return path signal power in the return frequency band;

(2) comparing the average return path signal power to a detection threshold; and

(3) determining the presence of an ingress event in the return frequency band based on the result of the comparison.

22. *(original)* The method of claim 1 wherein step (a) comprises the steps of:

(1) retrieving information on channel usage to distinguish active sub-bands from inactive sub-bands; and

(2) detecting the presence of ingress in the inactive sub-bands of the return path.

23. *(original)* The method of claim 22 wherein the information on channel usage is retrieved from the head-end.

24. *(original)* The method of claim 22 wherein channel usage is detected automatically at a location substantially near the subscriber location.

25. *(original)* The method of claim 1 wherein step (a) comprises the steps of:

(1) retrieving information on channel usage to distinguish active sub-bands from inactive sub-bands; and

(2) detecting the presence of ingress in the active sub-bands of the return path.

26. *(original)* The method of claim 25 wherein the information on the channel usage is retrieved from the head-end.

27. *(original)* The method of claim 25 wherein the channel usage is detected automatically at a location substantially near the subscriber location.

28. *(original)* The method of claim 27 wherein the automated detection of channel usage comprises the steps of:

(1) estimating a power spectrum density (PSD) of a return path signal;

(2) correlating the PSD with a set of stored PSDs;

(3) determining a frequency at peak correlation; and

(4) creating a frequency band in use.

29. *(original)* The method described in claim 25 wherein the active band is in use by an in-home device.

30. *(original)* The method described in claim 25 wherein the active band is in use by a communications gateway.